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a mixture of metals, constituting a particular group, accompanied by explanatory notes. This order is preserved throughout the book, which consists of sixty-one pages. We trust that the author and the reader will pardon us when we declare that we think such tabular schemes, so early in the course of analysis, are apt to make the student a mere machine—precisely what the author, in his introductory remarks, announces that he wishes to avoid, for he writes, “A mere mechanical acquaintance with a working scheme for separating \* \* \* \* is at best but a questionable accomplishment,” etc. And, for some unaccountable reason—perhaps from natural, human depravity or perversity—the great majority of students, beginning analysis, do wed themselves to such a table or scheme and cling to it, despite the rough handling they may receive from an earnest and intelligent quiz-master. But we are rambling. On returning to our subject we discover in it no new methods of separation, no new characteristic test or tests for the various elements; the landmarks in these directions remain unchanged. This is pardonable, seeing that “no pretense is made to originality, either in matter or in method.”

Part II. considers the ‘acid analysis’ and commences with excellent advice for the student, who must now, more than ever, apply what knowledge he may have acquired in regard to the metals and their various combinations with acids.

Brief chapters on ‘preliminary examinations,’ the solution of solid substances, a table of solubilities, and an appendix, dealing with the preparation of the ordinary reagents, conclude the book.

The little volume is well written and nicely printed. Its chief merit seems to be that it presents its author’s particular method of instructing students in this most important branch of chemistry, upon which many others have likewise prepared similar

brochures. The same kindly welcome given them must be accorded this latest arrival. Each does some good, and together they will doubtless do great good.

EDGAR F. SMITH.

*A Course of Elementary Practical Bacteriology, Including Bacteriological Analyses and Chemistry.* BY A. A. KANTHACK AND I. H. DRYSDALE. XXII. 181 pp. Sm. 8°. Macmillan & Co., London and New York. 1895. Price \$1.10.

This is a laboratory hand-book which will be interesting to all practical workers in bacteriology, since it gives the details of methods used in the Laboratory of St. Bartholomew’s Hospital in London. Some of these methods are not so useful as those now employed in American Laboratories; as, for example, that given for the collection and sterilisation of blood serum, while some are probably more rapid and convenient. As the authors remark, every laboratory has its own ways and means, its ‘short cuts’ and ‘tips,’ which are not always published, and it is necessary to work for a little while in the laboratory to become acquainted with them. The descriptions given are simple and straightforward, and well calculated to meet the wants of students. The plan and order of the several lessons will be found interesting by teachers of the subject. The lessons in Bacteriological Chemistry contain good matter not usually found in a manual of this kind.

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#### NOTES AND NEWS.

##### TYPHOID INFECTION OF OYSTERS.

THE *Medical News* of March 23, contains a paper by C. I. Foote, giving the results of experiments with oysters, and with the water in which they grow, to determine the possibilities of their becoming infected with the bacillus of typhoid. He found that this bacillus will live in brackish water, taken from just above oyster beds, for at

least eight days, even in very cold weather. In apparently normal and healthy oysters and in their juice he found bacteria of various kinds; the number of which that will grow in gelatin ranging from 240 to 1680 per c.c. The number found in the water over the oysters was 9520 per c.c., indicating that the water is purified by being taken into the shell. He inoculated a number of oysters with typhoid bacilli by injecting a culture of these organisms between the edges of the shells. The results indicate that the bacilli can live in the oyster for from one to two weeks, but it is doubtful whether they multiply there. But the oysters were cleaned before inoculation, and, after the operation, were apparently not placed in water, but simply kept in a cool room. The research would have given much more definite and conclusive results if the oysters had been placed in brackish water, and then the typhoid bacilli added to this water, so that they might have been taken in and disposed of in the natural way.

#### ARGON.

ACCORDING to the *London Times*, M. Berthelot has supplied the first information concerning the chemical properties of argon. In experimenting with a small quantity of that substance, furnished by Professor Ramsay, he has found that under the influence of the silent electric discharge it combines with various organic compounds, and notably with benzene. It is decidedly interesting to discover that argon, which is supposed to be totally inert, and has been vainly subjected to all the most potent agencies at the command of the chemist, is all the time capable of forming a variety of combinations under conditions which always exist in the atmosphere. Great interest also attaches to M. Berthelot's communication in connection with the obscurity which hangs over the chemical nature and relationships of the new substance. For he pointed out

years ago that nitrogen combines, under the influence of the silent discharge, with hydrocarbons like benzene, with carbohydrates, such as go to build up the tissues of plants, and even with tertiary products, such as ether.

#### GENERAL.

DR. WILLIAM S. W. RUSCHENBERGER, President of the Philadelphia Academy of Science from 1869 to 1881, died on March 24th, at the age of eighty-seven years.

DR. JOHN A. RYDER, Professor of Embryology in the University of Pennsylvania, died on March 26th.

THE Library Building of Harvard University will be altered during the present summer in such a manner that the space for books will be greatly enlarged.

THE North Dakota State University must be closed until the next session of the Legislature, in January, 1897, owing to the fact that the appropriation has been reduced from \$63,000 to \$15,000.

THE British Association will meet at Liverpool in 1896. The Council have resolved to nominate Sir Joseph Lister for President.

T. G. CROWELL & Co. announce 'Forests and Forestry' by the Hon. B. E. Fernow, of the Department of Agriculture, and 'Marriage and the Family,' by Professor George E. Howard, of Stanford University.

THE sixty-third annual meeting of the British Medical Association will be held in London, July 30th to August 2d, 1895.

THE next meeting of the American Microscopical Society will be held at Cornell University, Ithaca, New York, on August 21, 22 and 23, 1895.

DR. K. SCHMIDT has been made Professor of Physics in the University of Halle.

THE two final volumes of the report on the scientific results of the voyage of H. M. S. Challenger, prepared under the direction

of Dr. John Murray, have now been published by Eyre & Spottiswoode, London. The completed work fills 50 large quarto volumes containing about 29,500 pages and illustrated by over 3,000 plates. These two concluding volumes are mainly occupied by a general summary of the scientific results of the voyage.

DR. A. R. FORSYTH, of Trinity College, has been elected to the Sadlerian Professorship of Mathematics in the University of Cambridge, succeeding the late Professor Cayley.

ACCORDING to the *American Geologist*, efforts are being made looking towards a geological survey of the State of Maine.

DR. JOHN P. LOTSY, now Associate in Botany at Johns Hopkins University, has accepted the Directorship of the Botanical Gardens on the Island of Java.

THE Lake Superior Mining Institute made an excursion on March 6th, 7th and 8th, from Duluth to the Mesabi iron range. The mines were visited and in the evenings meetings were held, at which papers were presented by Dr. L. L. Hubbard, Dr. U. S. Grant, Mr. F. W. Denton, Mr. F. F. Sharpless and Mr. E. F. Brown.

THE tenth annual meeting of the American Association for the Advancement of Physical Education will be held at the Teachers' College, New York, on April 25th, 26th and 27th.

THE Journal of Mental Science gives, in the last number, a retrospect of Normal Psychology, prepared by Mr. Havelock Ellis, and proposes to give regular summaries of the progress of psychology.

THE Chemical Society has conferred its Faraday medal upon Lord Rayleigh in recognition of the investigation which has led to the discovery of Argon. Dumas, Canizzaro, Wurtz, Helmholtz, and Mendeléeff have been the previous recipients of the medal.

REV. HERBERT A. JAMES, principal of Cheltenham College, has been elected head master of Rugby, succeeding the Rev. Dr. Percival.

THE Woods Holl Biological Lectures for 1894, in the press of Ginn & Co., include : I. *Life from a Physical Standpoint*.—A. E. DOLBEAR. II. *A Dynamical Hypothesis of Inheritance*.—JOHN A. RYDER. III. *On the Limits of Divisibility of Living Matter*.—JACQUES LOEB. IV. *The Differentiation of Species on the Galapagos Islands and the Origin of the Group*.—G. BAUR. V. *Search for the Unknown Factors of Evolution*.—H. F. OSBORN. VI. *The Embryological Criterion of Homology*.—E. B. WILSON. VII. *Cell-Division and Development*.—J. P. McMURRICH. VIII. *The Problems, Methods and Scope of Developmental Mechanics*.—W. M. WHEELER (Roux's). IX. *The Organization of Botanical Museums for Schools, Colleges and Universities*.—J. M. MACFARLANE. X. *The Centrosome*.—S. WATASÉ. XI. *Evolution and Epigenesis*.—C. O. WHITMAN. XII. *Bonnet's Theory of Evolution*.—C. O. WHITMAN. XIII. *Bonnet on Palingenesis and Germs*.—C. O. WHITMAN.

#### SOCIETIES AND ACADEMIES.

BIOLOGICAL SOCIETY OF WASHINGTON,  
MARCH 23.

MR. CHARLES T. SIMPSON read a paper on the 'Respective Values of the Shell and Soft Parts in Naiad Classification.' Mr. Simpson deprecated the fashion of many conchologists of late in basing classification wholly on the soft parts and stated that his studies of the Naiads, or fresh water mussels, go to show that among them, at least, he has found the characters of the soft parts of the animal more variable and less reliable for the purposes of classification than those of the shell. That, while in some cases the soft parts give us the key to true affinities, in others they are worthless, and we must rely on the shell for a knowl-